# Explanation of references provided in the marked copy

The marked copy of claim amendments provided further below comprises:

1. References to the specification of the original application (PCT/CA05/000017 000017 published as WO 2005/067184), marked by indicating page number / paragraph number [p.nr/&nr].
2. References to the claims of this original application, marked by indicating claim number [clm.nr], wherein such original claims have been incorporated into 10/597,043 specification filed on 07/10/2006.
3. References to the specification of the original parent application (PCT/CA03/000909 published as WO 2004/002052), marked by indicating parents page number/paragraph number [par-p.nr/&nr]. All these references are pointing to this part of WO 2004/002052 only which has been incorporated into the 10/520,040 and from there into this application. Therefore these references are supported by this application specification.

# Claims Amendments

Please replace the previous claims section with the new claims section provided below.

## CLAIMS

While the invention has been described with reference to particular example embodiments, further modifications and improvements which will occur to those skilled in the art, may be made within the purview of the appended claims, without departing from the scope of the invention in its broader aspect.

Numerous modification and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

What is claimed is:

Claims 1-22 canceled.

Claims 23-30 canceled.

31. (Currently amended) A method of noise filtering edge detection (NFED) for recovering received signal edges, including over-sampling [p.1/&2, clm.13, ~~par-clm.29~~] and digital filtering of a received signal wave-form based on comparing an edge mask, representing an expected pattern of received wave-form samples corresponding to an edge of an original wave-form, with a sequence of captured wave-form samples surrounding a consecutive analyzed sample of the received wave-form [p.2/&5-6, p3/&6-p.4/&3, clm.1]; the NFED method comprising the steps of:

oversampling ~~capturing multiple samples of~~ the received signal wave-form carrying a data stream ~~per a symbol time[par-clm.29]~~ [ p.1/&2, clm.13, par-p.2/&3-p.3/&1, par-p.8/&2];

performing logical or arithmetic operations on particular samples of the edge mask and their counterparts from the sequence of surrounding samples [p.2/&5-6, p3/&7-p.4/&1, clm.1 & clm.2];

using results of such operations for calculating an edge proximity figure estimating a proximity of the analyzed sample to said received signal edge [p.2/&5-6, p.4/&2, clm.1 & clm.7];

using such edge proximity figures for detecting phases of said received signal edges [p. 2/&5-6, p.4/&3, clm.7].

32. (Currently amended) A method of noise filtering edge detection (NFED) for recovering received signal edges, including over-sampling [p.1/&2, clm.13, ~~par-clm.29~~] and digital filtering of a received signal wave-form based on comparing an edge mask, representing an expected pattern of received wave-form samples corresponding to an edge of an original wave-form, with a sequence of captured wave-form samples surrounding a

consecutive analyzed sample of the received wave-form [p.2/&5-6, p3/&6-p.4/&3, clm. 1]; the NFED method comprising the steps of:

oversampling ~~capturing multiple samples of~~ the received signal wave-form ~~per a symbol time[par-clm.29]~~ [ p.1/&2, clm.13, par-p.2/&3-p.3/&1, par-p.8/&2];

performing logical or arithmetic operations on particular samples of the edge mask and their counterparts from the sequence of surrounding samples [p.2/&5-6, p3/&7-p.4/&1, clm.1 & clm.2];

using results of such operations for calculating a correlation integral estimating a proximity of the analyzed sample to said received signal edge [p.2/&5-6, p.4/&2, clm.1 & clm.2, clm. 7];

using such correlation integrals for detecting phases of said received signal edges [p.2/&5-6, p.4/&3, clm.1 & clm.2, clm.7].

33. (Currently amended) A method of noise filtering edge detection (NFED) for recovering received signal edges, including over-sampling [p.1/&2, clm.13, ~~par-clm.29~~] and digital filtering of a received signal wave-form based on comparing an edge mask, representing an expected pattern of received wave-form samples corresponding to an edge of an original wave-form, with a sequence of captured wave-form samples surrounding a consecutive analyzed sample of the received wave-form [p.2/&5-6, p3/&6-p.4/&3, clm. 1]; the NFED method comprising the steps of:

oversampling ~~capturing multiple samples of~~ the received signal wave-form ~~per a symbol time[par-clm.29]~~ [ p.1/&2, clm.13, par-p.2/&3-p.3/&1, par-p.8/&2];

performing logical or arithmetic operations on particular samples of the edge mask and their counterparts from the sequence surrounding said analyzed sample [p.2/&5-6, p3/&7-p. 4/&1, clm.1 & clm.2];

using results of such operations for calculating a correlation integral estimating a proximity of the analyzed sample to said received signal edge [p.2/&5-6, p.4/&3, clm.1 & clm.2, clm. 7];

analyzing said correlation integrals calculated for the sequences surrounding consecutive analyzed samples, in order to find locations of maximums or minimums of such integrals [clm.3];

using such locations of maximums or minimums for detecting phases of said received signal edges [clm.3].

34. (Currently amended) A method of noise filtering edge detection (NFED) for recovering received signal edges, including over-sampling [p.1/&2, clm.13, ~~par-clm.29~~] and digital filtering of a received signal wave-form based on comparing an edge mask, representing an expected sequence of samples corresponding to said received signal edge, with a captured sequence of received signal samples surrounding a consecutive analyzed sample of the received wave-form [p.2/&5-6, p3/&6-p.4/&3, clm.1]; the NFED method comprising the steps of:

oversampling ~~capturing multiple samples of~~ the received signal wave-form ~~per a symbol time[par-clm.29]~~ [p.1/&2, clm.13, par-p.2/&3-p.3/&1, par-p.8/&2];

performing logical or arithmetic operations on particular samples of the edge mask and their counterparts from the sequence surrounding analyzed sample [p.2/&5-6, p3/&7-p.4/&1, clm.1 & clm2];

using results of such operations for calculating a correlation integral estimating a proximity figure of the analyzed sample to said received signal edge [p.2/&5-6, p.4/&3, clm.1 & clm.2, clm.7];

selecting those of the correlation integrals which exceed an edge threshold, as they indicate received signal changes greater than noise levels [clm.3 & clm.4] ;

analyzing such selected correlation integrals, calculated for the sequences surrounding consecutive analyzed samples, in order to find locations of maximums or minimums of the selected integrals [clm.3 & clm.4];

using such locations of maximums or minimums for detecting phases of said received signal edges [clm.3 & clm.4].

35. (Currently amended) A method of adaptive noise filtering edge detection (ANFED) [p. 2/&4] for recovering received signal edges, including ~~capturing multiple samples~~ oversampling of a received signal wave-form ~~per a symbol time [par-clm.29]~~ [p.1/&2, clm.13, par-p.2/&3-p.3/&1, par-p.8/&2]and digital filtering of the received signal wave-form based on comparing an edge mask, representing an expected sequence of samples corresponding to said received signal edge, with a captured sequence of received signal samples surrounding a consecutive analyzed sample of the received wave-form [p.2/&5-6, p3/&6-p.4/&3, clm.1], wherein a programmable control unit (PCU) controls operations of synchronous sequential stages (SSP) [p.2/&4]; the ANFED method comprising the steps of:

using said PCU for

a programmable registration and analysis of the captured received signal [p.2/&9-p.3/&1, clm.19-clm.22, par-p.7/&3-p.8/&1],

modifying said edge masks based on results of such signal analysis [p.2/&9-p.3/&1, clm.19-clm.22];

using said SSP for

performing logical or arithmetic operations on particular samples of the edge mask and their counterparts from the sequence of surrounding samples [p.2/&5-6, p3/&7-p.4/&1, clm.1 & clm.2],

using results of such operations for calculating a correlation integral estimating a proximity of the analyzed sample to said received signal edge [p.2/&5-6, p.4/&3, clm.1 & clm.2, clm. 7],

using such correlation integrals for detecting phases of said received signal edges [p.2/&5-6, p.4/&3, clm.1 & clm.2, clm.7].

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